Attorney's Docket No. 1032326-000139

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of	
Marc Birkner et al.	Group Art Unit: 2132
Application No.: 09/831,745	Examiner: JUNG W. KIM
Filed: September 20, 2001	Appeal No.: _____
For: METHOD AND DEVICE FOR CONTROLLING A PORTABLE OBJECT LIFE CYCLE, IN PARTICULAR, A SMART CARD	

APPEAL BRIEF

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This appeal is from the decision of the Primary Examiner dated February 15, 2006 finally rejecting claims 1, 3-8, 10-13, 15-23 and 36-38, which are reproduced as the Claims Appendix of this brief.

☐ A check covering the ☐ $ 250 ☐ $ 500 Government fee is filed herewith.

☒ Charge ☐ $ 250 ☒ $ 500 to Credit Card. Form PTO-2038 is attached.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.17, 1.21 and 41.20 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800.

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I. Real Party in Interest

GEMPLUS is the real party in interest, and is the assignee of Application No. 09/831,745.

II. Related Appeals and Interferences

There are no known appeals, interferences or judicial proceedings which will affect, or be directly affected by, or have bearing on the Board's decision in the pending appeal.

III. Status of Claims

The application contains claims 1-38. Claims 2 and 14 have been canceled. Claims 24-35 have been allowed, and claim 9 has been identified as containing allowable subject matter but is objected to as depending from a rejected claim. Claims 1, 3-8, 10-13, 15-23 and 36-38 stand finally rejected. This appeal is directed to all finally rejected claims.

IV. Status of Amendments

No amendments were heretofore filed subsequent to the final Office Action. This Brief is accompanied by an Amendment to correct an informality in claim 16 that was identified in the final Office Action. That amendment is reflected in the claims set forth in the Claims Appendix.

V. Summary of Claimed Subject Matter

The claimed subject matter is directed to the control of the life cycle of a portable electronic object, such as a smart card. As illustrated in the example of Figure 6a, during its life cycle the electronic object goes through a number of states, E1-E4 (pages 16-18 of the specification). The claimed subject matter is particularly concerned with avoiding problems of fraudulent initialization, or inadvertent error, as the life cycle transitions from one state to the next.

Referring to Figure 1, to address these concerns the object, e.g. smart card, contains a check engine 9 and a plurality of tables 11-13 that are employed to determine whether a transition from one state to another is permitted, and if so to carry out certain actions associated with that particular transition. The tables are illustrated in more detail in the example depicted in Figures 6a to 6d. The table of transitions 11, depicted in Figure 6b, indicates whether the transition from the current state to another state is permitted. The check table 12 of Figure 6c indicates the particular checks that are to be performed for a transition from one specific state to another. The table of actions 13, depicted in Figure 6d, indicates the actions to be performed during a given state transition. An example of the checks and actions associated with these tables is described on pages 18-21 of the specification.

The appealed claims include four independent claims, namely claims 1, 10, 11 and 12. Claim 1 recites a device for controlling the life cycle of a portable electronic object, in which the life cycle is determined by a succession of state transitions, where the states determine the services offered by the object. The object comprises a processing unit (Fig. 1, processing unit 2), a volatile memory (Fig. 1, RAM 3), program memories (Fig. 1, ROM 4) and data memories (Fig. 1, EEPROM

5). Each of the memories has a content defining a plurality of configurations (page 6, lines 22-24; page 17, line 15 to page 18, line 12). The life cycle control device comprises means for controlling the transition from a first state to a second state of the portable electronic object. In the disclosure, this means is generally embodied in the check engine 9, in combination with the tables 11, 12 and 13.

Claim 1 recites that the controlling means includes means for selectively enabling and/or inhibiting state transitions. This means comprises the check engine 9 in combination with the table 11 (page 11, lines 1-15). The control means also includes means for checking the content of the volatile memory, the data memories and the program memories of the portable electronic object as a function of the state transition to be effected (page 7, lines 3-6). This means comprises the check engine 9 in combination with the table 12 (page 9, lines 21-24). This checking means ensures that only some transitions are permitted amongst all the transitions between any two possible states of the portable electronic object. (Figure 5a; page 13, line 28 to page 15, line 6).

Claim 10 recites a portable electronic object having a processing unit (Fig. 1, processing unit 2), a volatile memory (Fig. 1, RAM 3), program memories (Fig. 1, ROM 4), data memories (Fig. 1, EEPROM 5), and a device for controlling the life cycle of the object (check engine 9 in combination with tables 11-13). This device comprises means for controlling the transition from a first state to a second state of the portable electronic object, including means for selectively enabling and/or inhibiting state transitions (check engine 9 in combination with table 11; page 11, lines 1-15). The device also includes means for checking the content of the volatile memory, the data memories and the program memories of the portable electronic

object as a function of the state transition to be effected (check engine 9 in combination with table 12; page 9, lines 21-24), so that only some transitions are permitted amongst all the transitions between any two possible states of the portable electronic object. (Fig. 5a; page 13, line 28, to page 15, line 6).

Claim 11 recites a smart card having a processing unit (Fig. 1, processing unit 2), a volatile memory (Fig. 1, RAM 3), program memories (Fig. 1, ROM 4), data memories (Fig. 1, EEPROM 5), and a device for controlling the life cycle of the object. This device comprises means for controlling the transition from a first state to a second state of the smart card (check engine 9 in combination with tables 11-13), including means for selectively enabling and/or inhibiting state transitions (check engine 9 in combination with table 11; page 11, lines 1-15). The device further includes means for checking the content of the volatile memory, the data memories and the program memories of the smart card as a function of the state transition to be effected (check engine 9 in combination with table 12; page 9, lines 21-24), so that only some transitions are permitted amongst all the transitions between two possible states of the smart card (Fig. 5a; page 13, line 28, to page 15, line 6).

Claim 12 recites a method of controlling the life cycle of a portable electronic object, the life cycle being determined by a succession of state transitions, with the states determining the services offered by the object (page 2, line 10, to page 3, line 2). The object comprises a processing unit (Fig. 1, processing unit 2), a volatile memory (Fig. 1, RAM 3), program memories (Fig. 1, ROM 4) and data memories (Fig. 1, EEPROM 5). Each of the memories has a content defining a plurality of configurations (page 6, lines 22-24). The method is implemented within the object, following a request to transition from a current state to a new state. A first step

comprises validation of the enabling of the request (Fig. 5a, step 51) using means for enabling and/or inhibiting state transitions (check engine 9 and table 11), so that only certain transitions are permitted amongst all the transitions between any two possible states of the object (page 14, lines 6-14). The second step comprises evaluating checks on the configuration of the object that are associated with a permitted transition (Fig. 5a, step 52; page 14, lines 14-19). The final step comprises changing to the new state of the object if the requested transition is enabled and if the checks on the configuration of the object are satisfied (Fig. 5a, steps 54 and 56; page 14, line 30 to page 15, line 5).

VI. Grounds of Rejection to be Reviewed on Appeal

The final Office Action presents four grounds of rejection:

1. Claims 1, 7, 10-17 and 36 stand finally rejected under 35 U.S.C. §102, as allegedly being anticipated by the Chan et al. patent (U.S. 6,005,942);

2. Claims 3 and 18 are finally rejected under 35 U.S.C. §103 on the basis of the Chan patent in view of the Wagner patent (U.S. 5,301,100);

3. Claims 4-6, 8 and 19-23 are rejected under 35 U.S.C. §103 on the basis of the Chan and Wagner patents in further view of the Silberschatz et al. publication; and

4. Claims 37 and 38 are rejected under 35 U.S.C. §103 on the basis of the Chan patent in view of the Grimonprez patent (U.S. 5,473,690).

Appellants request a review of the first and third grounds of rejection.

VII. Argument

A. Rejection of Claims 1, 7, 10-17 and 36 under 35 U.S.C. §102

1. Claims 1, 10 and 11

Claim 1 recites a device for controlling the life cycle of a portable electronic object that includes, among other elements, a volatile memory, program memories and data memories. These three different memories are respectively identified in Figure 1 as elements 3, 4 and 5. Claim 1 recites that the device comprises a means for controlling the transition from a first state to a second state of the portable object. This device includes, among other elements, "means for checking the content of the volatile memory, the data memories and the program memories of the portable electronic object as a function of the state transition to be effected." One example of this means, therefore, is the check engine 9 in conjunction with the check table 12 and the check programs 67, 68 referenced by that table.

In the Amendment filed January 6, 2006, Applicants pointed out that the Chan patent does not disclose this claimed subject matter. In response to this argument, the final Office Action states:

> Chan explicitly discloses a feature of the installation of an application into the IC card which meets the limitation in contention: an installed state of an application is achieved when an applet allocates the necessary space and data structure for the operation. (Col. 13: 7-9)

Thus, it appears that the Office Action is taking the position that, the mere act of installing an applet on a smart card, in which space is allocated within memory for the applet, meets the claimed subject matter.

As set forth in MPEP §2131, "to anticipate a claim, the reference must teach *every* element of the claim" (emphasis added). The Chan patent does not meet this

requirement. Claim 1 recites that the device for controlling the life cycle of the portable electronic object includes a means for checking the *content* of each of three different memories, namely the volatile memory, the data memories and the program memories of that object. The Chan patent's disclosure of installing an application at column 13, lines 7-9, including the allocation of necessary space in memory, does not teach the claimed subject matter. At best, it only teaches that space is allocated in the particular memory in which the applet is installed, e.g. the program memory. There is no disclosure that, during the installation process, the other memories, i.e. the volatile memory and the data memories, are also checked. Furthermore, there is no disclosure that the *content* of these memories are checked "as a function of the state transition to be effected."

In accordance with the teaching of the present application, by checking the content of these memories as a function of the particular state transition to be effected, fraudulent initialization and/or inadvertent error can be minimized. The Chan patent does not disclose that, during the installation of an applet on a card, these types of checks are carried out to accomplish these results, or any other results.

For at least this reason, therefore, the Chan patent fails to meet the requirement for a rejection based upon anticipation. The final Office Action has not shown that the Chan patent discloses *all* of the subject matter recited in the claim.

For the same reasons, claims 10 and 11 are also not anticipated. These two claims recite a portable electronic object and a smart card, respectively, having means for checking the content of the volatile memory, the data memories and the program memories as a function of the state transition to be effected. As discussed

in connection with claim 1, the Office Action does not identify such subject matter in the Chan patent.

2. Claim 12

Claim 12 recites a method of controlling the life cycle of a portable electronic object having a volatile memory, program memories and data memories. These memories have a content that defines a plurality of configurations. Claim 12 recites a method that is implemented "within the object". This method includes, among other steps, that of evaluating checks on the configuration of the object that are associated with a permitted transition. The final step is changing to the new state of the object if two conditions are met, i.e. the requested transition is enabled and the checks on the configuration of the object are satisfied.

In rejecting this subject matter, the final Office Action refers to the Chan patent at Figures 7a and 7b, as well as column 12, lines 43-67, column 16, lines 16-29, and column 17, lines 15-45, with the explanation "card domain validates and modifies the current state."

None of the referenced portions of the Chan patent disclose the step of evaluating checks on the *configuration* of the smart card, particularly checks that are associated with a permitted transition. Rather, the cited passages in the reference are primarily concerned with the mechanism for loading an application on the card. They do not disclose that the configuration of the card, as defined by the content of its memories, is checked as part of the loading process.

Again, therefore, for reasons similar to those presented previously, the Office Action does not meet the requirements for a rejection based upon anticipation.

While the Chan patent is directed to the same *general* subject matter as the pending claims, namely the life cycle of a portable electronic object such as a smart card, the claims are not broadly directed to that concept alone. Rather, they recite specific features that provide control over fraudulent initialization or inadvertent error that can occur in the transition between the states of the life cycle. The Office Action has not shown that the *specific* features recited in the claims, as identified above, are taught by the Chan patent.

B. Rejection of Claims 4-6, 8 and 19-23 under 35 U.S.C. § 103

1. Claims 4-6, 8 and 20

The rejection of claims 4-6 and 8 acknowledges that neither of the Chan nor Wagner patents suggests a table for checks and a table for actions. However, the final Office Action goes on to characterize the claimed subject matter as "a trivial permutation based on a standard entity-relationship data model", with reference to the Silberschatz publication at pages 23-28, sections 2.1.1 – 2.1.2. The Office Action fails to identify any relationship between the downloading of applications onto a smart card, as disclosed in the Chan patent, and objectives of the Silberschatz publication.

More particularly, as its title indicates, the Silberschatz publication is directed to database systems. The opening paragraph on page 23 states that the entity-relationship data model pertains to "database design". The concepts employed in the design of databases has no apparent applicability to the loading of applications onto smart cards. Nor does the final Office Action offer any explanation why a person of ordinary sill in the art would be motivated to look to the Silberschatz

publication when confronted with the problem of how to securely load applications onto a smart card.

As set forth in MPEP §2143, there are three criteria that must be met to establish a prima facie case of obviousness. The first of these is that "there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." The final Office Action does not identify any source of such a suggestion. It certainly is not found in the references themselves. The Chan patent does not give any hint that database design concepts can be employed for loading applications onto smart cards. Nor does the Silberschatz patent suggest any nexus between these two disparate objectives. Furthermore, the final Office Action does not cite any other evidence of knowledge in the art that would provide the necessary suggestion or motivation.

For at least this reason, therefore, the final Office Action does not establish a prima facie case of obviousness.

Another of the criteria set forth in the MPEP is that "the prior art reference (or references when combined) must teach or suggest all the claim limitations" (emphasis added). The final Office Action does not even attempt to meet this requirement. Specifically, it acknowledges that the Chan and Wagner patents do not disclose an element recited in claim 4, namely "a table of the checks to be made per permitted state transition." And yet it fails to identify where this claimed feature is taught in the Silberschatz publication. The reason for that is simple; the Silberschatz publication does not contain any such teaching. It is directed to database design, and as such is not concerned with performing checks during transitions of a portable

electronic object from one state to another. While relational databases may contain tables, per se, there is no disclosure of the particular type of check table recited in claim 4, particularly one that is used by a check engine as also recited in the claim.

For similar reasons, the subject matter of claim 20, which also recites a table of checks, is not taught by the references.

Claims 5, 6 and 8 recite extensions to the various tables. Again, the final Office Action does not even attempt to show where these claimed features are taught by the references. Rather, it simply dismisses them as "desirable features." Outside of Appellants' own disclosure, where is there any teaching of such desirability, let alone a disclosure of how to actually implement such features?

For this additional reason, therefore, the final Office Action fails to meet the criteria necessary to support a rejection under 35 U.S.C. § 103, since it has not shown that all of the claim limitations are taught or suggested by the prior art references.

C. Conclusion

The rejections of the claims are based upon generalities, and do not show that all of the claim limitations are anticipated by the Chan patent, or otherwise taught by the references. Furthermore, there is no evidence in the record of a suggestion or motivation to apply the database design principles of the Silberschatz publication to the field of endeavor of the Chan patent.

The rejections of the claims are not properly founded in the statute, and should be reversed.

VIII. Claims Appendix

See attached Claims Appendix for a copy of the claims involved in the appeal.

IX. Evidence Appendix

(none)

X. Related Proceedings Appendix

(none)

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date October 24, 2006

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VIII. CLAIMS APPENDIX

The Appealed Claims

1. A device for controlling the life cycle of a portable electronic object, the life cycle being determined by a succession of state transitions, said states determining the services offered by the object, said object comprising a processing unit, a volatile memory, program memories and data memories, each of said memories having a content defining a plurality of configurations, wherein said device comprises means for controlling the transition from a first state to a second state of the portable electronic object, including means for selectively enabling and/or inhibiting state transitions, and means for checking the content of the volatile memory, the data memories and the program memories of the portable electronic object as a function of the state transition to be effected, so that only some transitions are permitted amongst all the transitions between any two possible states of the portable electronic object.

3. A device according to claim 1, wherein the control means enable and/or inhibit a state transition, using a table of permitted state transitions.

4. A device according to Claim 3, wherein the control means comprise:
- in addition to the table of permitted state transitions;
- a table of the checks to be made per permitted state transition;
- and a check engine using said tables.

5. A device according to Claim 3, wherein the means for controlling the transition from a first state to a second state of the portable electronic object comprise:
- an extension to the table of permitted state transitions.

6. A device according to Claim 4, wherein the means for controlling the transition from a first state to a second state of the portable electronic object comprise:
- an extension to the table of permitted state transitions;
- an extension to the table of checks to be made per permitted state transition;

and wherein the check engine uses said table extensions.

7. A device according to claim 1, wherein the control means comprise means for triggering actions during the processing of a request for transition crossover from a first state to a second state of the portable electronic object.

8. A device according to Claim 7 wherein said controlling means includes:

- an extension to the table of permitted state transitions;
- an extension to the table of checks to be made per permitted state transition;
and wherein the check engine uses said table extensions; and
wherein said means for triggering actions during the processing of a request for transition crossover from a first state to a second state of the portable electronic object comprise a table of actions which can be used by the check engine.

10. A portable electronic object having a processing unit, a volatile memory, program memories, data memories, and a device for controlling the life cycle of the object comprising means for controlling the transition from a first state to a second state of the portable electronic object, including means for selectively enabling and/or inhibiting state transitions, and means for checking the content of the volatile memory, the data memories and the program memories of the portable electronic object as a function of the state transition to be effected, so that only some transitions are permitted amongst all the transitions between any two possible states of the portable electronic object.

11. A smart card having a processing unit, a volatile memory, program memories, data memories, and a device for controlling the life cycle of the object comprising means for controlling the transition from a first state to a second state of the smart card, including means for selectively enabling and/or inhibiting state transitions, and means for checking the content of the volatile memory, the data memories and the program memories of the smart card as a function of the state transition to be effected, so that only some transitions are permitted amongst all the transitions between two possible states of the smart card.

12. A method of controlling the life cycle of a portable electronic object, the life cycle being determined by a succession of state transitions, said states determining the services offered by the object, said object comprising a processing unit, a volatile memory, program memories and data memories, each of said memories having a content defining a plurality of configurations, said method being implemented, within the object, following a request _to transition from a current state to a new state, according to the following steps:

- a step of validation of the enabling of said request using means for enabling and/or inhibiting state transitions, so that only certain transitions are permitted amongst all the transitions between any two possible states of the object;
- a step of evaluating checks on the configuration of the object that are associated with a permitted transition; and
- a step of changing to the new state of the object if the requested transition is enabled and if said checks on the configuration of the object are satisfied.

13. A method according to Claim 12, further comprising a step of executing systematic actions associated with the requested transition.

15. A method according to Claim 12, further comprising a step of executing positive actions performed if the requested transition is permitted and if the checks associated with the requested transition are satisfied.

16. A method according to claim 12, further including a step of executing negative actions if the checks associated with the requested transition are not satisfied.

17. A method according to claim 12, further including a step of executing positive actions if the requested transition is permitted.

18. A method according to claim 12, implemented within the object, following a request for transition, wherein the step of validating the enabling of the said request comprises analysing a table of permitted transitions.

19. A method according to Claim 18, including the steps of:

- using an entry, corresponding to the requested transition, in a table of actions, and

- executing a program of actions defined by said entry.

20. A method according to claim 18, further including the step of evaluating the checks associated with the requested transition comprising the steps of:

- using an entry in a table of checks, and

- executing a program of checks defined by said entry.

21. A method according to claim 18 further including the step of executing positive actions, if the requested transition is enabled and if the checks associated with the requested transition are satisfied, comprising the steps of:

- using an entry, corresponding to the requested transition, in a table of actions, and

- executing a program of actions defined by said entry.

22. A method according to claim 18 further including the step of executing negative actions if the checks associated with the requested transition are not satisfied, comprising the steps of:

- using an entry, corresponding to the requested transition, in the table of actions, and

- executing a program of actions defined by said entry.

23. A method according to claim 18, further including the step of executing positive actions if the requested transition is enabled, comprising the steps of:

- using an entry, corresponding to the requested transition, in the table of actions, and

- executing program of actions defined by said entry.

36. A method according to claim 12, wherein said method does not enable the crossover of a state transition, from an additive state to a reference state.

37. The method according to claim 1, wherein said checking means determines whether said memories contain data that is invalid for the transition to be effected.

38. The method according to claim 12, wherein said evaluation step comprises checking whether said memories have a predetermined configuration associated with the transition from said current state to said new state.